

REMARKS

The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks.

35 U.S.C. §102(e) Rejection - Shattil

The Examiner has rejected claims 1-21 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2003/0147655 issued to Shattil (hereinafter referred to as "Shattil"). The Applicants respectfully submit that the present claims are allowable over Shattil.

As an initial matter, Applicants respectfully submit that all of the disclosure of Shattil is not valid prior art reference with respect to the present patent application. Shattil was filed on Feb. 7, 2003, whereas the present patent application was filed on Sept. 28, 2001. Shattil is a continuation-in-part of U.S. Patent Application No. 09/703,202, which was filed on Oct. 31, 2000. Shattil also claims priority to U.S. Provisional Application No. 60/163,141, which was filed on Nov. 2, 1999. However, the content of Shattil appears to differ considerably from the content of U.S. Patent Application No. 09/703,202 and from the content of U.S. Provisional Application No. 60/163,141. Since it is common to add new matter when filing a continuation-in-part and/or when maturing a provisional, Applicants respectfully request that, if the Examiner again intends to rely upon the disclosure of Shattil to reject the claims, then the Examiner particularly and precisely point out where each limitation in Shattil relied upon in rejecting a claim is fully and unambiguously supported in either U.S. Patent Application No. 09/703,202 or U.S. Provisional Application No. 60/163,141.

Claim 1 pertains to a method comprising:

“receiving information for transmission to a receiver; and

generating a plurality of sub-carriers to redundantly transmit the information over a multi-carrier wireless communication channel, wherein each of the sub-carriers is to be transmitted over an array of two or more antenna, wherein each of the sub-carriers is modified by a set of complex weights to ensure that each of the sub-carriers of the wireless communication channel propagates along a different physical path to the receiver, wherein the set of complex weights used to modify each of the sub-carriers includes different weights for each of the two or more antenna of the array”.

Shattil does not teach or suggest these limitations. In particular, as understood by Applicants, Shattil does not teach or suggest either: (a) that each of the sub-carriers is to be transmitted over an **array of two or more antenna**; or (b) that the set of complex weights used to modify each of the sub-carriers includes **different weights for each of the two or more antenna** of the array.

Shattil discusses emitting subcarriers by an antenna array. See e.g., paragraph [0027], paragraph [0118], and FIG. 4C. However, as discussed in paragraph [0118], *“each antenna element 424n transmits only one carrier”*. Accordingly, Shattil does not teach or suggest that each of the sub-carriers is to be transmitted over an **array of two or more antenna**.

Shattil discusses complex sub-carrier weights. However, Shattil does not teach or suggest that the set of complex weights used to modify each of the sub-carriers includes **different weights for each of the two or more antenna** of the array. Rather, as discussed above, *“each antenna element 424n transmits only one carrier”*. See e.g., paragraph [0118]. Since each antenna element transmits only one sub-carrier, it stands to reason that Shattil would not teach or suggest that the set of complex weights used to modify each of the sub-carriers includes **different weights for each of the two or more antenna** of the array.

In contrast, as explained in paragraph [0030] of the present patent application:

[0030] In accordance with the illustrated example implementation, sub-carrier diversity agent 216 is presented comprising control logic 310, which develops the set of complex weighting values to be applied to each of the signals. According to one example implementation, a complex weight value to modify, e.g., the amplitude and/or phase of the signal, is developed **for each antenna**. That is, **if the complex-valued baseband signal of a sub-carrier (i) is $s(i)$, then the signal transmit from antenna (j) is weighted with a complex-valued weight $w(i,j)$** and the baseband signal transmit from antenna (j) may be represented as:

$$w(i,j) * s(i) \quad (1)$$

Thus, for each sub-carrier (i), the vector of weights:

$$(w(i,1), w(i,2), \dots, w(i,N)) \quad (2)$$

where N is the number of antennae in the array, will determine a unique beampattern of the sub-carrier when transmitted from the antenna array. ... (emphasis added in the paragraph above).

Anticipation under 35 U.S.C. Section 102 requires every element of the claimed invention be identically shown in a single prior art reference. The Federal Circuit has indicated that the standard for measuring lack of novelty by anticipation is strict identity. *“For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, every element of the claimed invention must be identically shown in a single reference.”* In *Re Bond*, 910 F.2d 831, 15 USPQ.2d 1566 (Fed. Cir. 1990).

For at least one or more of these reasons, claim 1 and its dependent claims are believed to be allowable over Shattil.

Independent claim 7 recites in part that *“each of the set of complex weight values include a plurality of weight values each associated with a different one of a plurality of antennae of an antenna array through which the sub-carriers are transmitted”*. Accordingly, claim 7 and its dependent claims are believed to be allowable for similar reason(s).

Claim 20 pertains to a subscriber unit comprising:

*“a diversity agent, operable to selectively apply a **vector** of complex weight values to **each** of a plurality of signals, each corresponding to a sub-carrier of a multi-carrier communication channel, to introduce spatial diversity between such sub-carriers, wherein the vector of complex weight values applied to each signal includes a plurality of different complex weight values, and wherein **each** of the different complex weight values is operable to modify **both an amplitude and a phase of a respective signal**; and*

a transmit module, coupled with the diversity agent, operable to receive the modified sub-carriers and transmit the signals to generate the multi-carrier communication channel with intra-channel spatial diversity”.

Shattil does not teach or suggest these limitations. In particular, as understood by Applicants, Shattil does not teach or suggest that a vector of complex weight values be applied to each signal corresponding to a sub-carrier where each of the complex weight values of the vector is operable to modify both amplitude and a phase of the respective signal.

Accordingly, claim 20 is believed to be allowable. New claim 22 is believed to be allowable for similar reasons.

Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

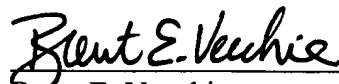
Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 1/22/07



Brent E. Vecchia
Reg. No. 48,011

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025-1030